All independent claims (1, 11, 14, 15) require that current diffusion layer comprise an AlGaInP type compound semiconductor material, and that there be a lattice mismatch of -1% or smaller between the current diffusion layer and a (layered) light emitting structure. It has repeatedly been argued that the primary applied reference (Fletcher) does *not* teach, and indeed teaches away from, from using AlGaInP as a current diffusion layer (see, e.g., the paragraph bridging columns 2 and 3 of U.S. Patent 5,008,718 to Fletcher et al).

Regarding Independent Claim 1

Claim 1 describes that a lattice mismatch of the current diffusion layer is -1% or smaller. This is not taught or suggested in Fletcher for at least the following reasons.

The Examiner admits that a lattice mismatch of -1% or smaller is not taught in Fletcher. The Examiner also admits that a AlGInP diffusion layer being lattice-mismatched with a AlGaInP light-emitting structure is not specifically disclosed in Fletcher. Nevertheless, the Examiner incorrectly contends that it would have been obvious to minimize lattice mismatch of the current diffusion layer in order to prohibit a high dislocation density which degrades optical properties.

Fletcher teaches away from the use of AlGaInP as the window layer, reciting that the layer is a III-V semiconductor alloy *different from AlGaInP* (column 3, lines 1-2), and describes that the material may *only be used near the fringes* of the quaternary alloy system, i.e., almost zero amounts of Al and In, for example. Therefore, a person skilled in the art would not be motivated to use such material in a light-emitting diode.

Further, a person skilled in the art would not be motivated to then lattice mismatch a current diffusion layer, and further be able to produce the precise numerical limitations as recited in independent claim 1. It was in fact the inventors of the present invention

who found the advantageous results of the claim elements and that lattice mismatch does not significantly effect resistivity of a bulk material (see page 19, lines 3-9 of the present specification for example).

Regarding Independent Claim 11

Claim 11 recites that the current diffusion layer is lattice-mismatched with the light-emitting structure. Specifically, the Examiner admits that Fletcher does not teach the AlGaInP diffusion layer being lattice-mismatched with the AlGaInP light-emitting structure. As discussed above, a person skilled in the art would not be motivated to use AlGaInP diffusion layer with a lattice mismatch from the light-emitting structure.

Regarding Independent Claim 14

Claim 14 recites that the semiconductor substrate is inclined in a [011] direction with respect to a (100) plane thereof. As discussed above, a person skilled in the art would not be motivated to use AlGaInP diffusion layer with a lattice mismatch from the light-emitting structure.

Regarding Independent Claim 15

Claim 15 recites that the current diffusion layer is lattice-mismatched with the light-emitting structure to obtain a prescribed level of resistivity of the current diffusion layer. As discussed above, a person skilled in the art would not be motivated to use AlGaInP diffusion layer with a lattice mismatch from the light-emitting structure.

In view of the foregoing and other considerations, the Examiner has ample bases for withdrawing all rejections and for allowance of all pending claims. Accordingly, a formal indication of allowance is earnestly solicited.

U.S. Patent Application of ***NAKATSU et al***
Serial No. 09/373,544

The Commissioner is authorized to charge the undersigned's deposit account #14-1140 in whatever amount is necessary for entry of these papers and the continued pendency of the captioned application.

Should the Examiner feel that an interview with the undersigned would facilitate allowance of this application, the Examiner is encouraged to contact the undersigned.

Respectfully submitted,

NIXON & VANDERHYE P.C.

March 20, 2003

By: _____
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I hereby certify that this Request for Reconsideration After Final and Amendment Transmittal is being facsimile transmitted for official filing to the Patent and Trademark Office on March 20, 2003, and specifically to 703-308-7722.

_____ March 20, 2003
H. Warren Burnam, Jr. date
Reg. 29, 366

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